

NOVEMBER/DECEMBER 2025

23PECH23B — GREEN CHEMISTRY

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the need of green chemistry?
2. What are the goals of green chemistry?
3. What is need for green synthesis?
4. Highlight few principles of green solvents.
5. How can you minimize and control pollution in the environment?
6. What are the advantages of acid catalysts in green chemistry for the environment?
7. Draw the structure of crown ethers.
8. Name the catalyst used for esterification and saponification?

9. Write about microwave-induced green synthesis.
10. Define sonochemistry. Give its advantages.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Write a note on chemical accidents.
- Or
- (b) Mention the international organizations that work towards promoting green chemistry.
12. (a) Explain with extensive examples of organic reactions performed using supercritical carbon dioxide.
- Or
- (b) What are the criteria for choosing green starting materials reagents, catalysts and solvents in organic synthesis?
13. (a) Define oxidation catalyst and applications in green chemistry.
- Or
- (b) How the activity and selectivity of catalysts be improved by the polymer support?

14. (a) Distinguish between reactions of displacement and elimination.

Or

- (b) What are the environmental advantages of using PTC in organic synthesis?
15. (a) How does microwave irradiation affect reaction rates in green chemistry?
- Or
- (b) Explain the instruments used in the sonochemical synthesis process.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Elaborate twelve principal of green chemistry.
17. Describe the green synthesis producing adipic acid and catechol.
18. Discuss the uses of photosensitizers supported by polymers in environmental remediation.
19. Determine the use of phase transfer catalysis.
20. Explain principles and Instrumentation in microwave induced green synthesis.

